Claims

1. Device for controlling lighting, more especially for the interiors of automotive vehicles, comprising at least one light source, at least one sensor (7) which influences the light source and detects at least the movement of a body (24) or of a part of the body within the active region (18) of the sensor, as well as having a control unit (27) associated with the light source for controlling the light source in dependence on a sensor signal supplied by the sensor by means of control means (34), which track the light of the light source in dependence on a sensor signal, which corresponds at least to the position of the body (24), indicating the movement of the body, characterized in that the sensor (7) includes means for recognizing a movement pattern of the body, and in that means are provided for generating a sensor signal in dependence on the movement pattern, and in that, on account of the sensor signal, the control means (34) track the light to the movement of the body in terms of amplitude and, where applicable dependent on direction.

2. Device according to claim 1, characterized in that the sensor includes optoelectronic elements for non-image recognition of the movement pattern.

3. Device according to one of the preceding claims, characterized in that the emergence of the light from the light source is disposed in the direct vicinity of the sensor (7).

4. Device according to one of the preceding claims, characterized in that the optical sensor (7) is disposed inside the controlling device.

5. Device according to one of the preceding claims, characterized in that the light source is formed by an LED, preferably by a plurality of LEDs (9 – 13) disposed in rows.

6. Device according to one of the preceding claims, characterized in that the light source is formed by at least one LED (36), which is at the same time at least partially a part of an optical sensor unit (28).

7. Device according to one of the preceding claims, characterized in that the light sources or respectively the LEDs are nested together as regards their direction of radiation.

8. Device according to one of the preceding claims, characterized in that the sensor (7) detects the position and where applicable the proximity of the body (24) in a three-dimensional manner.

9. Device according to one of the preceding claims, characterized in that the light source includes lighting means, which work in various directions, and in that the control means (34) partially activate the lighting means for tracking in the direction of the detected body (24).

10. Device according to one of the preceding claims, characterized in that a motor, preferably a setting motor, is associated with the light source, the control means (34) controlling said motor for tracking the light source in the direction of the detected body (24).

11. Device according to one of the preceding claims, characterized in that an intensity control (31) is provided for regulating the intensity of the light emitted from the light source, said intensity control responding when the body (24) approaches the active region (18) of the sensor and exceeds a predetermined value (40), and controlling the light source at least at partial output when the predetermined value is exceeded.

12. Device according to claim 11, characterized in that the intensity control controls the output of the light source in such a manner that the intensity increases to maximum output when the body (24) moves away and decreases to a minimum

value or until it is deactivated when the body continues to approach the sensor (7).

13. Device according to one of the preceding claims, characterized in that an indicating device for acoustic acknowledgement is provided with at least one sound or acoustic pattern.

14. Method for controlling a device for controlling lighting, more especially for the interiors of automotive vehicles, wherein a control signal, controlling at least one light source, is generated in a control unit (27), associated with the light source, in dependence on a sensor signal (28a), supplied by a sensor (7, 28), in such a manner that at least the movement of a body (24) or of a part of the body in the active region (18) of the sensor is detected, and control means (34) track the light source in dependence on a sensor signal (28a) of the movement of the body (24) corresponding at least to the position of the body, characterized in that the sensor (7) recognizes a movement pattern of the body and the sensor signal is generated in dependence on the movement pattern in such a manner that the control means (34) track the light to the movement of the body in terms of amplitude and where applicable according to direction on account of the sensor signal.

15. Method according to claim 14, characterized in that the control means (34) partially activate the lighting means of the light source, working in different directions, for the direction-dependent tracking in the direction of the detected body (24).

16. Method according to claim 14 or 15, characterized in that adjacent rows of lighting means are controlled together, where applicable at half intensity.

17. Method according to one of the preceding claims 14 to 16, characterized in that the control means (34) control a motor, associated with the light source, preferably a setting motor for the direction-dependent tracking of the light source in the direction of the detected body (24).

18. Method according to one of the preceding claims 14 to 17, characterized in that if when the body (24) approaches the active sensor region (18) of the optical sensor (7, 28), associated with the light source, the value of the positional detection deviates by more than a predetermined value from a central axis of a positional detection region (21), this is recognized as a movement pattern and the light is activated in the direction of the body (24) or is deactivated.

19. Method according to claim 18, characterized in that the light direction determined by the positional detection of the body (24) is retained if no more change in the position of the body is detected.

20. Method according to one of the preceding claims 14 to 19, characterized in that the sensor (7, 28) detects the proximity of and the position of the body (24) in a three-dimensional manner.

21. Method according to one of the preceding claims 14 to 20, characterized in that an intensity regulating means (31) responds when the body (24) approaching the active sensor region (18) is recognized as a movement pattern and the sensor signal (28a) exceeds a predetermined value, and the light source is operating with at least part output when the predetermined value is exceeded.

22. Method according to claim 21, characterized in that the intensity control (31) continues to control the output in such a manner that when the body (24) moves away the intensity increases to maximum output and when the body continues to approach the sensor the intensity decreases to a minimum value or respectively until it is deactivated.

23. Method according to claim 22, characterized in that the output decreases to the minimum value on the first approach and is only deactivated if the approach continues.

24. Method according to one of the preceding claims 14 to 23, characterized in that when a predetermined distance between the body (24) and the sensor (7, 28) is exceeded, the current direction of operation is fixed.

25. Method according to one of the preceding claims 14 to 24, characterized in that the sensor (7, 28) recognizes the following movement pattern and the control unit (34) controls the device by way of this movement pattern as follows:
    - approaching the body (24) and as a result activating the light source with at least partial intensity,
    - moving away the body (24) and as a result, where applicable, increasing the intensity and directing at the same time the light in the direction of the body,
    - continuous moving away the body (24) and retaining the intensity of the light in the desired position.

26. Method according to one of the preceding claims 14 –25, characterized in that the sensor (7, 28) recognizes the approaching of the body (24) for deactivating the device and where a predetermined distance between body and sensor is fallen below and when the body (24) continues to approach, said distance corresponding to a maximum of the active region (18) of the sensor, the light source is gradually turned down or regulated down until the light source is extinguished, where applicable when the body makes repeated approaches.

27. Method according to one of the preceding claims 14 to 26, characterized in that where the body (24) makes a movement in the active region (18) of the sensor at a constant distance from the sensor, the light is tracked in a direction-dependent manner at constant intensity.

28. Method according to one of the preceding claims 14 to 27, characterized in that for the gradual tracking of the light intensity, the control unit (34), proceeding from a condition at predetermined intensity with a predetermined position of the body (24), either changes the intensity in the one direction if the body continues to approach, or changes it in the other direction if the body (24) continues to

move away, and in that the obtained intensity is retained at least until a new movement is made past the obtained intensity.

29. Method according to claim 28, characterized in that below a predetermined intensity, the light is only reducible until the light source is deactivated.

30. Method according to one of the preceding claims 14 to 29, characterized in that an indicating device generates at least one sound or one acoustic pattern in dependence on the movement detected by the sensor.

31. Method according to claim 30, characterized in that various acoustic patterns are generated, for example for deactivating or activating the light source or for tracking, dimming or regulating.